

DTG	SPEED	INTENSITY	DTG	SPEED	INTENSITY	DTG	SPEED	INTENSITY	DTG	SPEED	INTENSITY
04/12Z	5	30	07/18Z	3	75	10/18Z	3	100	14/00Z	6	55
04/18Z	5	35	08/00Z	3	75	11/00Z	4	100	14/06Z	5	50
05/00Z	4	40	08/06Z	3	75	11/06Z	3	90	14/12Z	5	50
05/06Z	3	40	08/12Z	2	75	11/12Z	3	85	14/18Z	5	35
05/12Z	2	40	08/18Z	3	75	11/18Z	4	75	15/00Z	5	20
05/18Z	2	40	09/00Z	4	85	12/00Z	5	75			
06/00Z	1	40	09/06Z	6	90	12/06Z	5	70			
06/06Z	1	40	09/12Z	5	90	12/12Z	4	65			
06/12Z	1	45	09/18Z	4	95	12/18Z	4	65			
06/18Z	1	50	10/00Z	4	110	13/00Z	4	60			
07/00Z	2	60	10/06Z	3	110	13/06Z	5	60			
07/06Z	2	75	10/12Z	3	100	13/12Z	6	60			
07/12Z	2	75				13/18Z		60			

TYPHOON SARAH
BEST TRACK TC- 22
04 OCT-15OCT 1979
MAX SFC WIND 110 KTS
MINIMUM SLP 929 MBS

LEGEND

- 06 HOUR BEST TRACK POSIT
- A SPEED OF MOVEMENT
- B INTENSITY
- C POSITION AT XX/0000Z
- ... TROPICAL DISTURBANCE
- ... TROPICAL DEPRESSION
- TROPICAL STORM
- TYPHOON
- ◆ SUPER TYPHOON START
- ◇ SUPER TYPHOON END
- ◆◆◆ EXTRATROPICAL
- ◆◆◆ DISSIPATING STAGE
- ★ FIRST WARNING ISSUED
- ☆ LAST WARNING ISSUED

Typhoon Sarah spawned in the monsoonal trough during late September 1979. This trough extended from the southwestern portion of the South China Sea toward Luzon. A northeast monsoon surge existed north of the trough, while the southwest monsoon dominated the area south of the trough. The circulation was steered initially by the southwest monsoon and then later by the first northeast surge of the fall from the Asian mainland. During the last few days of September, the circulation meandered slowly toward Luzon under the influence of the southwest monsoon, and then looped over Luzon during the first three days of October as a mid-tropospheric short-wave trough moved eastward north of Luzon. Once the short-wave trough had moved east of the circulation, the northeast surge intensified and became more of an influence as the circulation finished its loop and began its south-southwest track.

On 5 and 6 October, Sarah, now a tropical storm, apparently was again influenced by another mid-tropospheric short-wave trough which moved across Sarah's longitudinal position and induced the brief eastward movement in her track. At this time, the southwest monsoon also increased in intensity and may have been another factor in steering Sarah eastward. For almost the entire period that Sarah was tracking southward, there was a weakness in the mid-tropospheric ridge between the Philippines and the Asian mainland, enabling Sarah's track to be influenced by short-wave troughs. This weakness in the ridge resulted in mid-tropospheric flow that was too weak to significantly affect the steering of Sarah. This weakness allowed the surface winds to dictate Sarah's direction of motion through the first 8 days of October. Figures 3-22-1 and 3-22-2 illustrate the surface and mid-level flow patterns which influenced Sarah during this phase of her track.

During Sarah's depression stage, strong easterlies in the upper-troposphere restricted Sarah's outflow to the northeast, thus inhibiting development into a tropical storm. As Sarah proceeded southward, the easterlies decreased in strength, outflow increased, and Sarah intensified to tropical storm and then typhoon strength. It is very interesting to note that Sarah intensified to typhoon strength while tracking southward which is quite unusual for a tropical cyclone. Several aircraft reconnaissance flights reported that Sarah had attained typhoon strength even though her cloud structure was not well organized.

During the first several days of October when Sarah was slowly developing to typhoon strength and moving south, Palawan Island and the central Philippines were battered by high winds and rain. These areas were inundated by flooding and landslides which caused massive crop damage and death. Many villages were cut off from any

source of food, fresh water, and other necessities for survival. Four deaths were attributed to Sarah. On 8 October, Sarah finally began to track westward and the weather finally cleared over Palawan Island and the central Philippines. Sarah's change in track was due to the strengthening of the mid-tropospheric ridge north of Sarah from Luzon across the South China Sea into Asia. Aircraft reconnaissance early on the 9th reported that Sarah's structure had become better organized. Earlier aircraft reported that Sarah was not vertically aligned; but on the 9th, the mid-level center had become vertically aligned with the surface center. With vertical alignment and improved upper-level outflow, Sarah's intensity increased to 110 kt (57 m/sec) as she became a most impressive storm. This is in contrast to her unusual origin.

After Sarah reached peak intensity early on 10 October, she began to slowly weaken as



FIGURE 3-22-3. Sarah with 60 kt (31 m/sec) intensity one day prior to landfall over Vietnam, 13 October 1979, 0136Z. (DMSP imagery)

she tracked west-northwestward (Fig. 3-22-3). Sarah continued on a west-northwest track until dissipation over Vietnam on 17 October. After 20 days, she dissipated within 300 nm (556 km) of her origin as a monsoon depression on 28 September.

FIGURES 3-22-1 and 3-22-2 are on following pages.

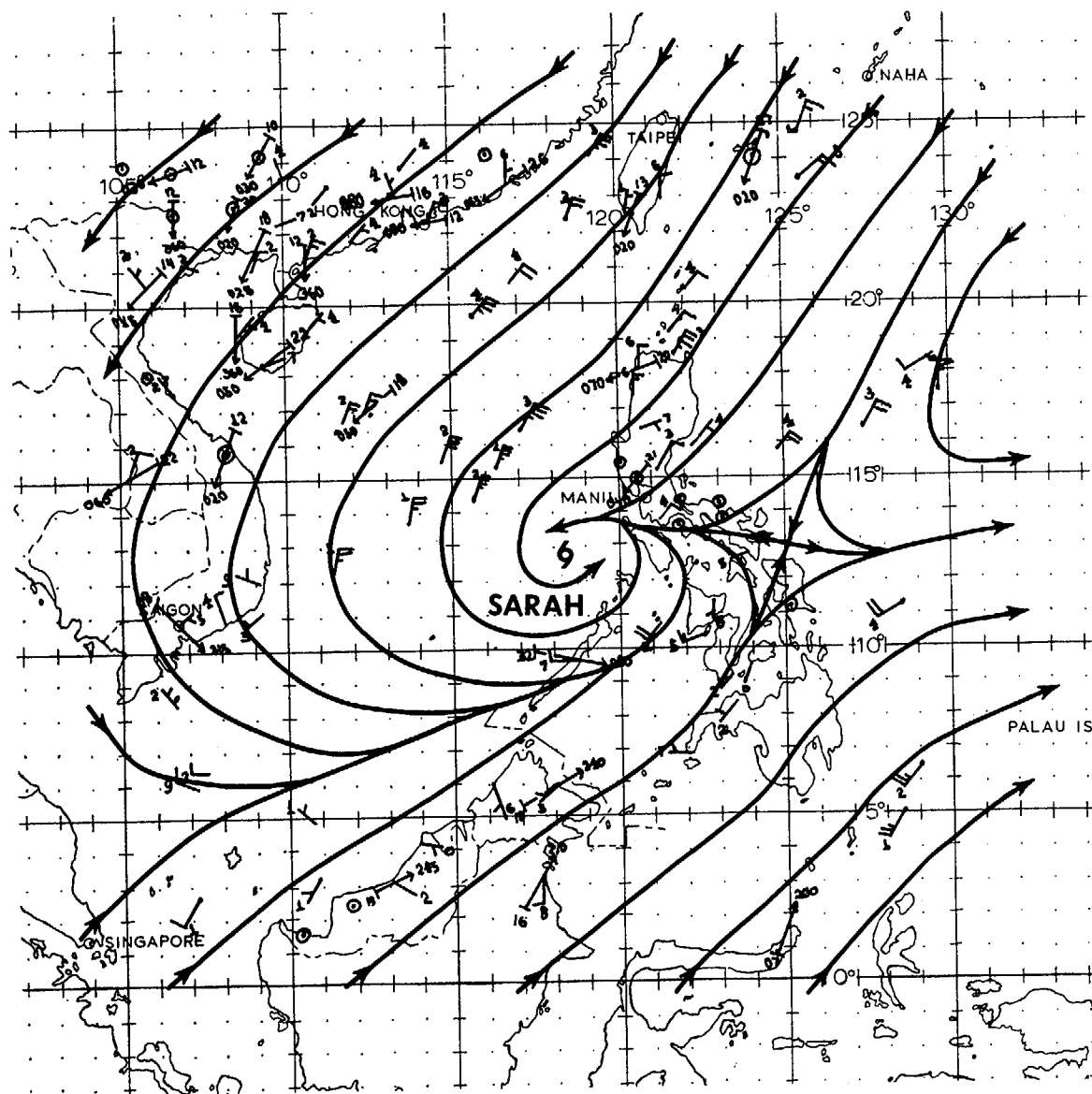


FIGURE 3-22-1. The 050000Z October 1979 surface (—) / gradient-level (ddd — 66) wind data and streamline analysis. Wind speeds are in knots.

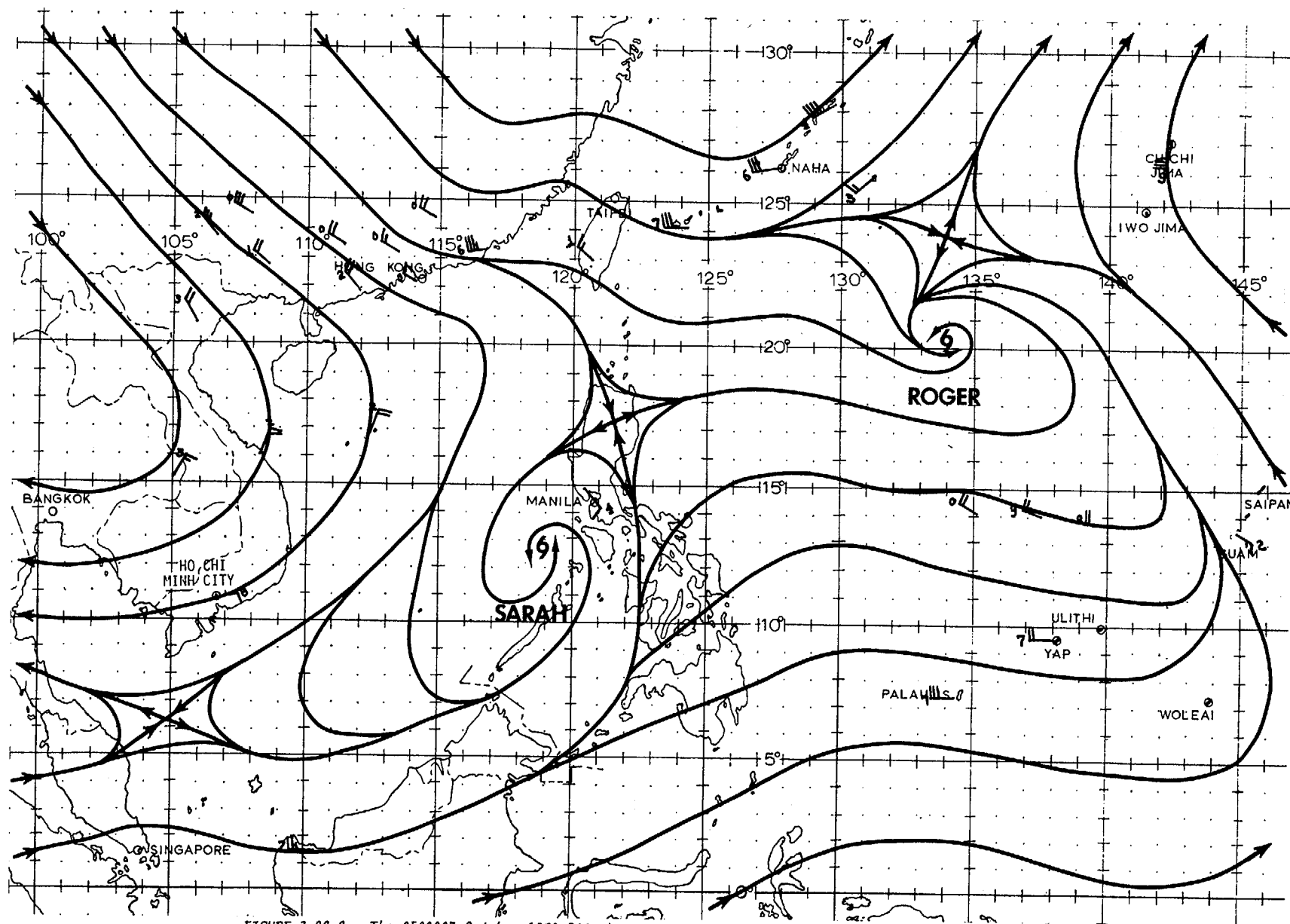


FIGURE 3-22-2. The 050000Z October 1979 500 mb streamline analysis. Wind speeds are in knots.